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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,779	07/01/2003	Ming-De Deng	3161-18-2	6652

22442 7590 05/01/2007

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EXAMINER	
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ART UNIT	**PAPER NUMBER**
1652	

MAIL DATE	DELIVERY MODE
05/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/612,779	DENG ET AL.	
	Examiner	Art Unit	
	Delia M. Ramirez	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7-14,17-21,23,25-41,45-47,49,50,52-61,207-212 and 218-242* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7,9-14,17-21,23,25-41,45-47,49,50,52-61,207-212,218,219,227,228 and 230-242* is/are rejected.

7)☒ Claim(s) *8,220-226,229* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Application

Claims 1-4, 7-14, 17-21, 23, 25-41, 45-47, 49-50, 52-61, 207-212 and 218-242 are pending.

Applicant's amendment of claims 1-4, 7-8, 11, 13-14, 17-21, 23, 36-41, 45-47, 49-50, 52-59, 207-208, 210-212, 218-226, cancellation of claims 22, 24, 42-44, 48, 51, 213-217, and addition of claims 227-242 as submitted in a communication filed on 2/12/2007 is acknowledged.

New claims 227-242 are deemed directed to the elected invention. New claims 227, 240-242 are generic claims whereas claims 228-239 are specifically directed to the elected invention (i.e., method to produce glucosamine or N-acetylglucosamine comprising culturing a microorganism which has at least one genetic modification that increases the activity of the glucosamine-6-phosphate acetyltransferase of SEQ ID NO: 30 and the glucosamine-6-phosphate synthase of SEQ ID NO: 6).

Neither linking claim 1 nor generic claims 2-4, 9-14, 19-21, 23, 25-41, 45-47, 49-50, 52-61, 207-212, 218, 227, 240-242 are allowable at this time. This application contains claims 7-8, 17, 18, drawn in part to an invention non-elected with traverse in a communication filed on 5/22/2006. A complete reply to the final rejection must include cancellation of non-elected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claims 1-4, 9-14, 19-21, 23, 25-41, 45-47, 49-50, 52-61, 207-212 and 218-242 and claims 7-8, 17-18 in part are at issue and are being examined herein.

Rejections and/or objections not reiterated from previous office actions are hereby withdrawn.

Claim Objections

1. Claims 7-8, 17-18 are objected to as being directed to non-elected subject matter. They will be examined to the extend they encompass the elected invention. Appropriate correction is required.

2. Claim 218 is objected to due to the recitation of "a the bacterial or yeast...". This appears to be a typographical error. It should be amended to recite "a bacterial...". Appropriate correction is required.

3. Claims 223, 224, 229 are objected to due to the recitation of "partial or complete deletion of [gene name]". For consistency with language commonly used in the art, it is suggested the term be amended to recite "partial or complete deletion of the [gene name] gene(s) ". Appropriate correction is required.

4. Claims 1-4, 7-14, 17-21, 23, 25-41, 45-47, 49-50, 52-57, 60-61, 218-242 are objected to due to the recitation in claims 1, 218-219, 222, 240 of "collecting a product produced from the step of culturing which is selected from the group consisting of "glucosamine-6-phosphate, glucosamine-1-phosphate, N-glucosamine-1-phosphate" for the following reasons. The preamble of the claims indicates that the method claimed is one to produce glucosamine or N-acetylglucosamine. It is understood from the specification that increasing the intracellular activity of glucosamine-6-phosphate acetyltransferase results in higher amounts of N-acetylglucosamine. Also, glucosamine-6-phosphate acetyltransferase catalyzes the conversion of glucosamine-6-phosphate to N-acetyl-glucosamine-6-phosphate, thus it would be expected that an increase in glucosamine-6-phosphate acetyltransferase activity would result in an increase in the amount of N-acetyl-glucosamine-6-phosphate. While the Examiner is not arguing that one could not collect the compounds recited above from the culture medium or from the cells themselves (intracellular contents), in a method where the goal is to produce glucosamine or N-acetyl-glucosamine by increasing the expression of glucosamine-6-phosphate acetyltransferase, one would expect to collect those compounds which are either the desired product (i.e., glucosamine or N-acetylglucosamine) or the precursors of the desired product which are produced as a result of the increase in enzymatic activity of glucosamine-6-phosphate acetyltransferase (i.e., N-acetyl-glucosamine-6-phosphate). It is not apparent that the levels of the remaining compounds, i.e., glucosamine-6-phosphate, glucosamine-1-phosphate, and N-glucosamine-1-phosphate, would increase if there is an increase in glucosamine-6-phosphate

acetyltransferase activity. While the argument can be made that additional modifications can be added to the organism to be fermented such that N-glucosamine-1-phosphate or glucosamine-1-phosphate levels would increase, it is noted that glucosamine-6-phosphate is the substrate of glucosamine-6-phosphate acetyltransferase. Thus, if the goal is to produce glucosamine-6-phosphate to further obtain glucosamine, it is unclear as to why one would increase glucosamine-6-phosphate acetyltransferase activity since this increase would have the opposite effect, namely reduce the levels of glucosamine-6-phosphate. In addition, as written, the method does not require the collection of the desired compounds (i.e., glucosamine, N-acetylglucosamine) nor does it require the collection of the precursor N-acetyl-glucosamine-6-phosphate. The method only requires the collection of one of the compounds recited in view of the recitation of "a product produced....selected from the group...". It is suggested that if the intended method is one where glucosamine/N-acetylglucosamine are collected in addition to all the precursors recited such that they can be further processed, the claim should be amended to indicate that both the desired products and the precursors recited are collected, and a step should be added where it is indicated that the precursors recited are converted into the desired products. Clarification and/or appropriate correction is required.

Claim Rejections - 35 USC § 112, Second Paragraph

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 7, 17, 47, 219, 227-228, 230-239 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This rejection is necessitated by amendment.

7. Claim 7, 17, 219, (228, 230-239 dependent thereon) are indefinite in the recitation of "wherein the glucosamine-6-phosphate acetyltransferase has....., wherein the glucosamine-6-phosphate

acetyltransferase has acetyltransferase activity", "wherein the...glucosamine-6-phosphate synthase comprises..., wherein the glucosamine-6-phosphate synthase has synthase activity", "nucleic acid ...encoding a glucosamine-6-phosphate acetyltransferase....and has glucosamine-6-phosphate acetyltransferase enzymatic activity" and "nucleic acid...encoding a glucosamine-6-phosphate synthase.....and has glucosamine-6-phosphate synthase enzymatic activity" for the following reasons. The enzymatic activity of the recited polypeptides appears to be indicated at the beginning of the phrase. Thus, it is unclear if the enzymatic functional limitation further recited in the claims is merely redundant, or if the recitation of the enzyme name at the beginning of the phrase is not intended to be a functional limitation. For examination purposes, no patentable weight will be given to the terms "wherein the glucosamine-6-phosphate acetyltransferase has acetyltransferase activity", "wherein the glucosamine-6-phosphate synthase has synthase activity", "has glucosamine-6-phosphate acetyltransferase enzymatic activity", and "has glucosamine-6-phosphate synthase enzymatic activity". Correction/clarification is required.

8. Claims 47, 227-228, 230-231 (claims 232-233 dependent thereon) are indefinite in the recitation of "bacterium or yeast further comprises a partial or complete deletion of [protein name]" for the following reasons. It is unclear as to what a partial or complete deletion of a protein is. As written, one cannot determine if the "partial or complete deletion of the protein" is intended to mean "partial or complete deletion of an endogenous gene encoding the recited protein", or "partial or complete inactivation of the protein recited". For examination purposes, it will be assumed that the term reads "partial or complete deletion of an endogenous gene encoding [protein name]". Correction is required.

Claim Rejections - 35 USC § 112, First Paragraph

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claims 1-4, 9-14, 17-21, 23, 25-41, 45-47, 49-50, 52-61, 207-212, 218 remain rejected and new claims 227, 240-242 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection as applied to claims 227, 240-242 is necessitated by amendment.

11. This rejection has been discussed at length in the Non Final action mailed on 8/10/2006 and it is applied to new claims 227, 240-242 for the reasons of record and those set forth below.

12. Applicant argues that the specification exemplifies in detail the sequences of bacterial, yeast and plant glucosamine-6-phosphate synthases and glucosamine-6-phosphate acetyltransferases, and teaches that the invention is not limited to a particular species or genus. According to Applicant, the art teaches other glucosamine-6-phosphate synthases/acetyltransferases and the specification shows that the methodology is applicable to glucosamine-6-phosphate synthases and glucosamine-6-phosphate acetyltransferases from diverse organisms. Therefore, it is Applicant's contention that consistent with Federal Circuit precedent, Applicant is not required to provide the sequences of every enzyme required in the invention because these sequences are known in the art. Applicant also submits that similar enzymes share significant homology or identity in domains that are important for enzymatic activity and refer to Example 13 where the structures of glucosamine-6-phosphate acetyltransferases from *E. coli*, *C. albicans*, *S. cerevisiae* and *A. thaliana* were compared and analyzed. Applicant also indicates that the claims have been amended such that they encompass subject matter for which the specification provides adequate support.

13. Applicant's arguments have been fully considered but are not deemed persuasive to overcome the rejection of claims 1-4, 9-14, 17-21, 23, 25-41, 45-47, 49-50, 52-61, 207-212, 218 or avoid the rejection of new claims 227, 240-242. The Examiner acknowledges (1) the teachings of the specification, (2) the

amendments made, (3) the knowledge of the prior art regarding the structure of additional glucosamine-6-phosphate synthases/acetyltransferases, and (4) the specification need not describe every permutation of an invention nor subject matter known to those of skill in the art. However, the Examiner disagrees with Applicant's contention that the claimed invention is adequately described by the teachings of the specification or the art. The claims encompass a method which requires (1) a genus of modifications that would result in increased expression of a genus of bacterial/yeast/fungal glucosamine-6-phosphate acetyltransferases, (2) nucleic acids encoding a genus of bacterial/yeast/fungal glucosamine-6-phosphate acetyltransferases, (3) a genus of structural modifications in any bacterial/yeast glucosamine-6-phosphate synthase such that it has reduced product inhibition, (4) nucleic acids encoding a genus of bacterial/yeast phosphoglucoisomerases, glutamine synthases, and/or glucose-6-phosphate dehydrogenases, and/or (5) partial or complete deletions in a genus of bacterial/yeast genes encoding glucosamine-6-phosphate deaminases, phosphofructokinases, enzymes associated with glycogen synthesis, ADP-glucose pyrophosphorylases, glycogen synthases, and/or branching enzymes. While it is agreed that some of the enzymes recited and their corresponding coding DNAs are known in the art, the claims require an extremely large genus of unknown modifications and DNAs. It is noted that the claims are not limited to those modifications/DNAs which are known. The Examiner acknowledges that Applicant has disclosed four glucosamine-6-phosphate acetyltransferases which appear to produce the desired compounds. However, the method requires any number of bacterial/yeast/fungal enzymes having that activity. These enzymes are essential for the claimed method. Thus, the genus of DNAs recited should be adequately described. As previously indicated, the specification is silent with regard to the structural features required in any protein having the desired activity. There is no structure/function correlation which would allow one of skill in the art to envision the structure of any enzyme as recited.

With regard to the modifications required to obtain increased expression, it is reiterated herein that a genetic modification that results in increased expression encompasses not only using strong

heterologous promoters but it also encompasses modifications in the regulatory region of a gene to modulate expression, as well as the co-expression of unknown genes encoding transcription/translation enhancers/inducers. The specification is silent with regard to modifications in the regulatory region of a gene to modulate expression of any bacterial/yeast gene encoding a glucosamine-6-phosphate acetyltransferase, nor does it provide any information as to which genes encode proteins that would enhance transcription/translation of genes encoding the recited enzymes.

With regard to modifications that would result in reduced product inhibition of bacterial/yeast glucosamine-6-phosphate synthases, it is noted that there is no disclosure in the specification or the art which provides the structural elements found in any bacterial/yeast glucosamine-6-phosphate synthase associated with production inhibition, such that one could envision which structural modifications can be made to any bacterial/yeast glucosamine-6-phospahte synthase and obtain the desired reduction effect. With regard to partial or complete deletion of the recited bacterial/yeast genes, it is noted that partial/complete deletion of a gene requires some knowledge as to the structure of the gene to be deleted. Neither the specification nor the art provide the structural elements found in any bacterial/yeast gene encoding the recited proteins, such that one of skill in the art can use these structural elements to achieve partial/complete deletion of the target gene. Thus, for the reasons set forth above, and those of record, one cannot reasonably conclude the claimed method is adequately described.

14. Claims 1-4, 9-14, 17-21, 23, 25-41, 45-47, 49-50, 52-61, 207-212, 218 remain rejected and new claims 227, 240-242 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for (A) a fermentation method to produce glucosamine or N-acetylglucosamine which comprises culturing an *E. coli* cell transformed with (1) a nucleic acid encoding the polypeptide of SEQ ID NO: 30, and (2) a nucleic acid encoding the polypeptides of SEQ ID NO: 2, 4, 6, 8, 10, 12 or 14, wherein the *E. coli* cell further comprises inactivating deletions in the pfkA, nagA, nagB, nagE and

manXYZ genes, and (B) a fermentation method to produce glucosamine or N-acetylglucosamine which comprises culturing a bacterial or yeast cell transformed with (1) a nucleic acid encoding the polypeptide of SEQ ID NO: 30, and (2) a nucleic acid encoding the polypeptides of SEQ ID NO: 2, 4, 6, 8, 10, 12 or 14, does not reasonably provide enablement for a fermentation method to produce glucosamine or N-acetylglucosamine by culturing a bacterial/yeast/fungal cell which has any genetic modification that would result in increased expression of any bacterial/yeast/fungal glucosamine-6-phosphate acetyltransferase, is further transformed with a nucleic acid that encodes any bacterial or yeast (1) glucosamine-6-phosphate synthase, (2) glucosamine-6-phosphate synthase which has reduced product inhibition, (3) phosphoglucoisomerase, (4) glutamine synthase, and/or (5) glucose-6-phosphate dehydrogenase, and has a partial or complete deletion in the endogenous genes encoding (1) glucosamine-6-phosphate deaminases, (2) phosphofructokinases, (3) any enzyme associated with glycogen synthesis, (4) ADP-glucose pyrophosphorylases, (5) glycogen synthases, or (6) branching enzymes. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. This rejection as it relates to new claims 227, 240-242 is necessitated by amendment.

15. This rejection has been discussed at length in the Non Final action mailed on 8/10/2006 and it is applied to new claims 227, 240-242 for the reasons of record and those set forth below.

16. Applicant argues that the claims have been amended to recite the culturing of a bacterium or a yeast. Applicant submits that the specification provides specific examples which show culturing of these organisms, examples of genetic modifications that result in increased gene expression, methods to inactivate/delete genes, and examples of glucosamine-6-phosphate synthases that have reduced product inhibition. Applicant points out that the enzymatic pathways that lead to glucosamine/N-acetylglucosamine and glycogen synthesis in bacteria and yeast are known in the art. Applicant

concludes that the combined teachings of the specification with the knowledge in the art would allow one of skill in the art to make and use the full scope of the claimed invention without undue experimentation.

17. Applicant's arguments have been fully considered but are not deemed persuasive to overcome the rejection of claims 1-4, 9-14, 17-21, 23, 25-41, 45-47, 49-50, 52-61, 207-212, 218 or avoid the rejection of new claims 227, 240-242. The Examiner acknowledges (1) the teachings of the specification, (2) the amendments made, and (3) the knowledge of the prior art. However, the Examiner disagrees with Applicant's contention that the specification and/or the prior art enables the full scope of the claimed invention. As indicated above, the claims now encompass a method which requires (1) any number of modifications that would result in increased expression of a genus of bacterial/yeast/fungal glucosamine-6-phosphate acetyltransferases, (2) nucleic acids encoding any bacterial/yeast/fungal glucosamine-6-phosphate acetyltransferase, (3) any structural modification in any bacterial/yeast glucosamine-6-phosphate synthase such that the glucosamine-6-phosphate synthase has reduced product inhibition, (4) nucleic acids encoding any bacterial/yeast phosphoglucoisomerase, glutamine synthase, and/or glucose-6-phosphate dehydrogenase, and/or (5) partial or complete deletions in any bacterial/yeast gene encoding a glucosamine-6-phosphate deaminase, a phosphofructokinase, an enzyme associated with glycogen synthesis, an ADP-glucose pyrophosphorylase, a glycogen synthase, and/or a branching enzyme. The claims as written require an extremely large number of unknown modifications and DNAs encoding the recited enzymes. The Examiner acknowledges that four glucosamine-6-phosphate acetyltransferases have been disclosed which appear to produce the desired compounds. However, the method requires any number of bacterial/yeast/fungal enzymes having that activity. As previously indicated, the specification is silent with regard to the structural features required in any protein having the desired activity, the structural elements found in bacterial/yeast/fungal enzymes not found in similar enzymes from other organisms, the level of structural variability among all the bacterial/yeast/fungal enzymes recited, and a structure/function correlation that would allow one of skill in the art to envision the structure of any

enzyme as recited. Therefore, one of skill in the art would have to test an extremely large number of bacterial/yeast/fungal genes to determine which ones encode proteins having the recited activity.

As indicated above, a genetic modification that results in increased expression encompasses not only using strong heterologous promoters but it also encompasses modifications in the regulatory region of a gene to modulate expression, as well as the co-expression of unknown genes encoding transcription/translation enhancers/inducers. The specification is silent with regard to modifications in the regulatory region of a gene to modulate expression of any bacterial/yeast/fungal gene encoding a glucosamine-6-phosphate acetyltransferase, nor does it provide any information as to which genes encode proteins that would enhance transcription/translation of genes encoding the recited enzymes. Therefore, one of skill in the art would have to test an infinite number of (1) structural modifications in the regulatory regions of a bacterial/yeast/fungal gene encoding the recited enzyme to determine which ones result in increased expression, and (2) genes to determine which ones encode proteins that would enhance/induce transcription/translation.

Neither the specification or the art which provides the structural elements found in any bacterial/yeast glucosamine-6-phospahte synthase associated with production inhibition. Therefore, one of skill in the art would have to test an infinite number of structural modifications to determine which ones would result in reduced product inhibition of any bacterial/yeast glucosamine-6-phospahte synthase. With regard to partial or complete deletion of the recited bacterial/yeast genes, it is reiterated herein that partial/complete deletion of a gene requires some knowledge as to the structure of the gene to be deleted. In the absence of some knowledge or guidance as to which structural elements are associated with any bacterial/yeast gene encoding the recited proteins, one of skill in the art would have to isolate all bacterial/yeast genes encoding the recited proteins to achieve partial/complete deletion of those genes. Thus, for the reasons set forth above, and those of record, one cannot reasonably conclude that the full scope of the claimed method is enabled by the teachings of the specification and/or the art.

Allowable Subject Matter

18. Claims 8, 220-226, 229 appear to be allowable over the prior art of record but are objected to for the reasons set forth above and/or as being dependent upon a rejected base claim.

Conclusion

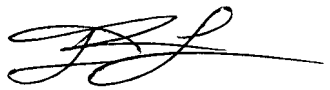
19. No claim is in condition for allowance.

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PMR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delia M. Ramirez whose telephone number is (571) 272-0938. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Ponnathapura Achutamurthy can be reached on (571) 272-0928. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1600.



Delia M. Ramirez, Ph.D.
Patent Examiner
Art Unit 1652

DR
April 28, 2007

DELIA M. RAMIREZ, PH.D.
PRIMARY EXAMINER